

VII. COMPLIANCE AND ENFORCEMENT PROFILE

Background

To date, EPA has focused much of its attention on measuring compliance with specific environmental statutes. This approach allows the Agency to track compliance with the Clean Air Act, the Resource Conservation and Recovery Act, the Clean Water Act, and other environmental statutes. Within the last several years, the Agency has begun to supplement single-media compliance indicators with facility-specific, multimedia indicators of compliance. In doing so, EPA is in a better position to track compliance with all statutes at the facility level, and within specific industrial sectors.

A major step in building the capacity to compile multimedia data for industrial sectors was the creation of EPA's Integrated Data for Enforcement Analysis (IDEA) system. IDEA has the capacity to "read into" the Agency's single-media databases, extract compliance records, and match the records to individual facilities. The IDEA system can match Air, Water, Waste, Toxics/Pesticides/EPCRA, TRI, and Enforcement Docket records for a given facility, and generate a list of historical permit, inspection, and enforcement activity. IDEA also has the capability to analyze data by geographic area and corporate holder. As the capacity to generate multimedia compliance data improves, EPA will make available more in-depth compliance and enforcement information. Additionally, sector-specific measures of success for compliance assistance efforts are under development.

Compliance and Enforcement Profile Description

Using inspection, violation, and enforcement data from the IDEA system, this section provides information regarding the historical compliance and enforcement activity of this sector. In order to mirror the facility universe reported in the Toxic Chemical Profile, the data reported within this section consists of records only from the TRI reporting universe. With this decision, the selection criteria are consistent across sectors with certain exceptions. For the sectors that do not normally report to the TRI program, data have been provided from EPA's Facility Indexing System (FINDS) which tracks facilities in all media databases. Please note, in this section, EPA does not attempt to define the actual number of facilities that fall within each sector. Instead, the section portrays the records of a subset of facilities within the sector that are well defined within EPA databases.

As a check on the relative size of the full sector universe, most notebooks contain an estimated number of facilities within the sector according to the Bureau of the Census (See Section II). With sectors dominated by small businesses, such as metal finishers and printers, the reporting universe within the EPA databases may be small in comparison to Census data. However, the group selected for inclusion in this data analysis section should be consistent with this sector's general make-up.

Following this introduction is a list defining each data column presented within this section. These values represent a retrospective summary of inspections and enforcement actions, and solely reflect EPA, State, and local compliance assurance activities that have been entered into EPA databases. To identify any changes in trends, the EPA ran two data queries, one for the past five calendar years (August 10, 1990 to August 9, 1995) and the other for the most recent twelve-month period (August 10, 1994 to August 9, 1995). The five-year analysis gives an average level of activity for that period for comparison to the more recent activity.

Because most inspections focus on single-media requirements, the data queries presented in this section are taken from single media databases. These databases do not provide data on whether inspections are State/local or EPA-led. However, the table breaking down the universe of violations does give the reader a crude measurement of the EPA's and States' efforts within each media program. The presented data illustrate the variations across regions for certain sectors.² This variation may be attributable to State/local data entry variations, specific geographic concentrations, proximity to population centers, sensitive ecosystems, highly toxic chemicals used in production, or historical noncompliance. Hence, the exhibited data do not rank regional performance or necessarily reflect which regions may have the most compliance problems.

Compliance and Enforcement Data Definitions

General Definitions

Facility Indexing System (FINDS) -- this system assigns a common facility number to EPA single-media permit records. The FINDS identification number allows EPA to compile and review all permit, compliance, enforcement, and pollutant release data for any given regulated facility.

Integrated Data for Enforcement Analysis (IDEA) -- is a data integration system that can retrieve information from the major EPA program office databases. IDEA uses the FINDS identification number to "glue together" separate data records from EPA's databases. This is done to create a "master list" of data records for any given facility. Some of the data systems accessible through IDEA are: AIRS (Air Facility Indexing and Retrieval System, Office of Air and Radiation), PCS (Permit Compliance System, Office of Water), RCRIS (Resource Conservation and Recovery Information System, Office of Solid Waste), NCDB (National Compliance Data Base, Office of Prevention, Pesticides, and Toxic Substances), CERCLIS (Comprehensive Environmental and Liability Information System, Superfund), and TRIS (Toxic Release Inventory System). IDEA also contains information from outside sources such as Dun and Bradstreet and the Occupational Safety and Health Administration (OSHA). Most data queries displayed in notebook Sections IV and VII were conducted using IDEA.

Data Table Column Heading Definitions

Facilities in Search -- are based on the universe of TRI reporters within the listed SIC code range. For industries not covered under TRI reporting requirements, the notebook uses the FINDS universe for executing data queries. The SIC code range selected for each search is defined by each notebook's selected SIC code coverage described in Section II.

Facilities Inspected --- indicates the level of EPA and State agency facility inspections for the facilities in this data search. These values show what percentage of the facility universe is inspected in a 12 or 60 month period. This column does not count non-inspectional compliance activities such as the review of facility-reported discharge reports.

Number of Inspections -- measures the total number of inspections conducted in this sector. An inspection event is counted each time it is entered into a single media database.

Average Time Between Inspections -- provides an average length of time, expressed in months, that a compliance inspection occurs at a facility within the defined universe.

Facilities with One or More Enforcement Actions -- expresses the number of facilities that were party to at least one enforcement action within the defined time period. This category is broken down further into Federal and State actions. Data are obtained for administrative, civil/judicial, and criminal enforcement actions. Administrative actions include Notices of Violation (NOVs). A facility with multiple enforcement actions is only counted once in this column (facility with 3 enforcement actions counts as 1). All percentages that appear are referenced to the number of facilities inspected.

Total Enforcement Actions -- describes the total number of enforcement actions identified for an industrial sector across all environmental statutes. A facility with multiple enforcement actions is counted multiple times (a facility with 3 enforcement actions counts as 3).

State Lead Actions -- shows what percentage of the total enforcement actions are taken by State and local environmental agencies. Varying levels of use by States of EPA data systems may limit the volume of actions accorded State enforcement activity. Some States extensively report enforcement activities into EPA data systems, while other States may use their own data systems.

Federal Lead Actions -- shows what percentage of the total enforcement actions are taken by the U.S. EPA. This value includes referrals from State agencies. Many of these actions result from coordinated or joint State/Federal efforts.

Enforcement to Inspection Rate -- expresses how often enforcement actions result from inspections. This value is a ratio of enforcement actions to inspections, and is presented for comparative purposes only. This measure is a rough indicator of the relationship between inspections and enforcement. This measure simply indicates historically how many enforcement actions can be attributed to inspection activity. Related inspections and enforcement actions under the Clean Water Act (PCS), the Clean Air Act (AFS) and the Resource Conservation and Recovery Act (RCRA) are included in this ratio. Inspections and actions from the TSCA/FIFRA/EPCRA database are not factored into this ratio because most of the actions taken under these programs are not the result of facility inspections. This ratio does not account for enforcement actions arising from non-inspection compliance monitoring activities (e.g., self-reported water discharges) that can result in enforcement action within the CAA, CWA and RCRA.

Facilities with One or More Violations Identified -- indicates the number and percentage of inspected facilities having a violation identified in one of the following data categories: In Violation or Significant Violation Status (CAA); Reportable Noncompliance, Current Year Noncompliance, Significant Noncompliance (CWA); Noncompliance and Significant Noncompliance (FIFRA, TSCA, and EPCRA); Unresolved Violation and Unresolved High Priority Violation (RCRA). The values presented for this column reflect the extent of noncompliance within the measured

time frame, but do not distinguish between the severity of the noncompliance. Percentages within this column can exceed 100 percent because facilities can be in violation status without being inspected. Violation status may be a precursor to an enforcement action, but does not necessarily indicate that an enforcement action will occur.

Media Breakdown of Enforcement Actions and Inspections -- four columns identify the proportion of total inspections and enforcement actions within EPA Air, Water, Waste, and TSCA/FIFRA/EPCRA databases. Each column is a percentage of either the "Total Inspections," or the "Total Actions" column.

VII.A. The Rubber and Miscellaneous Plastics Products Industry Compliance History

Exhibit 33 provides a Regional breakdown of the five year enforcement and compliance activities for the rubber and miscellaneous plastics products industry. Regions IV and V conducted approximately 60 percent of the inspections of rubber and miscellaneous plastics products manufacturing facilities performed in the United States. This large percentage is due to the concentration of rubber and miscellaneous plastics products facilities in these areas.

Exhibit 33
Five Year Enforcement and Compliance Summary for the
Rubber and Plastics Industry

A	B	C	D	E	F	G	H	I	J
Rubber and Plastic SIC 30	Facilities in Search	Facilities Inspected	Number of Inspections	Average Number of Months Between Inspections	Facilities w/one or more Enforcement Actions	Total Enforcement Actions	State Lead Actions	Federal Lead Actions	Enforcement to Inspection Rate
Region I	93	59	233	25	24	40	63%	38%	0.17
Region II	88	57	332	17	28	61	75%	25%	0.18
Region III	152	78	422	23	29	81	79%	21%	0.19
Region IV	411	207	1,371	19	40	125	95%	5%	0.09
Region V	577	253	1,040	35	41	52	85%	15%	0.05
Region VI	166	55	211	50	9	17	71%	29%	0.08
Region VII	100	47	183	34	15	31	32%	68%	0.17
Region VIII	27	12	43	40	4	9	89%	11%	0.21
Region IX	122	30	146	53	4	7	57%	43%	0.05
Region X	41	25	63	41	9	20	60%	40%	0.32
Total/Average	1,777	823	4,044	28	203	443	78%	22%	0.11

VII.B. Comparison of Enforcement Activity Between Selected Industries

Exhibits 34-37 contain summaries of the one and five year enforcement and compliance activities for the rubber and miscellaneous plastics products industry, as well as for other selected industries. As indicated in Exhibits 34 and 35, the rubber and miscellaneous plastics products industry has an average enforcement to inspection rate (12 percent) when compared to other industries. Of the 4,044 inspections conducted at 963 rubber and miscellaneous plastics products manufacturing facilities over a five year period, 496, or 12 percent, resulted in enforcement actions. Approximately 11 percent of inspections in the manufacturing sector as a whole resulted in enforcement actions.

Exhibit 34
Five Year Enforcement and Compliance Summary for Selected Industry

A	B	C	D	E	F	G	H	I	J
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Average Number of Months Between Inspections	Facilities w/One or More Enforcement Actions	Total Enforcement Actions	State Lead Actions	Federal Lead Actions	Enforcement to Inspection Rate
Metal Mining	873	339	1,519	34	67	155	47%	53%	0.10
Non-metallic Mineral Mining	1,143	631	3,422	20	84	192	76%	24%	0.06
Lumber and Wood	464	301	1,891	15	78	232	79%	21%	0.12
Furniture	293	213	1,534	11	34	91	91%	9%	0.06
Rubber and Plastic	1,665	739	3,386	30	146	391	78%	22%	0.12
Stone, Clay, and Glass	468	268	2,475	11	73	301	70%	30%	0.12
Nonferrous Metals	844	474	3,097	16	145	470	76%	24%	0.15
Fabricated Metal	2,346	1,340	5,509	26	280	840	80%	20%	0.15
Electronics/Computers	405	222	777	31	68	212	79%	21%	0.27
Motor Vehicle Assembly	598	390	2,216	16	81	240	80%	20%	0.11
Pulp and Paper	306	265	3,766	5	115	502	78%	22%	0.13
Printing	4,106	1,035	4,723	52	176	514	85%	15%	0.11
Inorganic Chemicals	548	298	3,034	11	99	402	76%	24%	0.13
Organic Chemicals	412	316	3,864	6	152	726	66%	34%	0.19
Petroleum Refining	156	145	3,257	3	110	797	66%	34%	0.25
Iron and Steel	374	275	3,555	6	115	499	72%	28%	0.14
Dry Cleaning	933	245	633	88	29	103	99%	1%	0.16

Exhibit 35
One Year Enforcement and Compliance Summary for Selected Industry

A	B	C	D	E		F		G	H
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Facilities w/One or More Violations		Facilities w/One or More Enforcement Actions		Total Enforcement Actions	Enforcement to Inspection Rate
				Number	Percent*	Number	Percent*		
Metal Mining	873	114	194	82	72%	16	14%	24	0.13
Non-metallic Mineral Mining	1,143	253	425	75	30%	28	11%	54	0.13
Lumber and Wood	464	142	268	109	77%	18	13%	42	0.15
Furniture	293	160	113	66	41%	3	2%	5	0.04
Rubber and Plastic	1,665	271	435	289	107%	19	7%	59	0.14
Stone, Clay, and Glass	468	146	330	116	79%	20	14%	66	0.20
Nonferrous Metals	844	202	402	282	140%	22	11%	72	0.18
Fabricated Metal	2,346	477	746	525	110%	46	10%	114	0.15
Electronics/Computers	405	60	87	80	133%	8	13%	21	0.24
Motor Vehicle Assembly	598	169	284	162	96%	14	8%	28	0.10
Pulp and Paper	306	189	576	162	86%	28	15%	88	0.15
Printing	4,106	397	676	251	63%	25	6%	72	0.11
Inorganic Chemicals	548	158	427	167	106%	19	12%	49	0.12
Organic Chemicals	412	195	545	197	101%	39	20%	118	0.22
Petroleum Refining	156	109	437	109	100%	39	36%	114	0.26
Iron and Steel	374	167	488	165	99%	20	12%	46	0.09
Dry Cleaning	933	80	111	21	26%	5	6%	11	0.10
*Percentages in Columns E and F are based on the number of facilities inspected (Column C). Percentages can exceed 100% because violations and actions can occur without a facility inspection.									

Exhibit 36
Five Year Inspection and Enforcement Summary by Statute for Selected Industries

Industry Sector	Number of Facilities Inspected	Total Inspections	Enforcement Actions	Clean Air Act		Clean Water Act		Resource Conservation and Recovery Act		FIFRA/TSCA/ [*] EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Metal Mining	339	1,519	155	35%	17%	57%	60%	6%	14%	1%	9%
Non-metallic Mineral Mining	631	3,422	192	65%	46%	31%	24%	3%	27%	<1%	4%
Lumber and Wood	301	1,891	232	31%	21%	8%	7%	59%	67%	2%	5%
Furniture	293	1,534	91	52%	27%	1%	1%	45%	64%	1%	8%
Rubber and Plastic	739	3,386	391	39%	15%	13%	7%	44%	68%	3%	10%
Stone, Clay and Glass	268	2,475	301	45%	39%	15%	5%	39%	51%	2%	5%
Nonferrous Metals	474	3,097	470	36%	22%	22%	13%	38%	54%	4%	10%
Fabricated Metal	1,340	5,509	840	25%	11%	15%	6%	56%	76%	4%	7%
Electronics/Computers	222	777	212	16%	2%	14%	3%	66%	90%	3%	5%
Motor Vehicle Assembly	390	2,216	240	35%	15%	9%	4%	54%	75%	2%	6%
Pulp and Paper	265	3,766	502	51%	48%	38%	30%	9%	18%	2%	3%
Printing	1,035	4,723	514	49%	31%	6%	3%	43%	62%	2%	4%
Inorganic Chemicals	302	3,034	402	29%	26%	29%	17%	39%	53%	3%	4%
Organic Chemicals	316	3,864	726	33%	30%	16%	21%	46%	44%	5%	5%
Petroleum Refining	145	3,237	797	44%	32%	19%	12%	35%	52%	2%	5%
Iron and Steel	275	3,555	499	32%	20%	30%	18%	37%	58%	2%	5%
Dry Cleaning	245	633	103	15%	1%	3%	4%	83%	93%	<1%	1%

*

Actions taken to enforce the Federal Insecticide, Fungicide, and Rodenticide Act; the Toxic Substances and Control Act, and the Emergency Planning and Community Right-to-Know Act as well as other Federal environmental laws.

Exhibit 37
One Year Inspection and Enforcement Summary by
Statute for Selected Industries

Industry Sector	Number of Facilities Inspected	Total Inspections	Enforcement Actions	Clean Air Act		Clean Water Act		Resource Conservation and Recovery Act		FIFRA/TSCA/EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Metal Mining	114	194	24	47%	42%	43%	34%	10%	6%	<1%	19%
Non-metallic Mineral Mining	253	425	54	69%	58%	26%	16%	5%	16%	<1%	11%
Lumber and Wood	142	268	42	29%	20%	8%	13%	63%	61%	<1%	6%
Furniture	293	160	5	58%	67%	1%	10%	41%	10%	<1%	13%
Rubber and Plastic	271	435	59	39%	14%	14%	4%	46%	71%	1%	11%
Stone, Clay, and Glass	146	330	66	45%	52%	18%	8%	38%	37%	<1%	3%
Nonferrous Metals	202	402	72	33%	24%	21%	3%	44%	69%	1%	4%
Fabricated Metal	477	746	114	25%	14%	14%	8%	61%	77%	<1%	2%
Electronics/Computers	60	87	21	17%	2%	14%	7%	69%	87%	<1%	4%
Motor Vehicle Assembly	169	284	28	34%	16%	10%	9%	56%	69%	1%	6%
Pulp and Paper	189	576	88	56%	69%	35%	21%	10%	7%	<1%	3%
Printing	397	676	72	50%	27%	5%	3%	44%	66%	<1%	4%
Inorganic Chemicals	158	427	49	26%	38%	29%	21%	45%	36%	<1%	6%
Organic Chemicals	195	545	118	36%	34%	13%	16%	50%	49%	1%	1%
Petroleum Refining	109	439	114	50%	31%	19%	16%	30%	47%	1%	6%
Iron and Steel	167	488	46	29%	18%	35%	26%	36%	50%	<1%	6%
Dry Cleaning	80	111	11	21%	4%	1%	22%	78%	67%	<1%	7%

* Actions taken to enforce the Federal Insecticide, Fungicide, and Rodenticide Act; the Toxic Substances and Control Act, and the Emergency Planning and Community Right-to-Know Act as well as other Federal environmental laws.

VII.C. Review of Major Legal Actions

VII.C.1. Review of Major Cases

This section provides summary information about major cases that have affected this sector. As indicated in the EPA's *Enforcement Accomplishments Report, FY 1991, FY 1992, FY 1993* publications, six significant enforcement cases were resolved between 1991 and 1993 for the rubber and plastics products manufacturing industry. Two of these actions involved violations of CAA, and RCRA, TSCA, CERCLA, and EPCRA accounted for one action each. Five of these cases were brought against either rubber tire or rubber hose manufacturing companies, and one case was brought against a plastic product manufacturer. The cases involving the rubber product manufacturing industry included improper disposal of PCBs, failure to repair or replace PCB transformers, responsibility for a Superfund site, producing mercury and benzene emissions beyond NESHAP requirements, and failure to control VOC emissions. The case involving the plastic product manufacturing industry included operation of a surface impoundment and waste pile in violation of RCRA.

Five of the six enforcement actions resulted in the assessment of a penalty. Penalties ranged from \$135,000 to \$1,500,000, and in five cases, the defendant was ordered to spend additional money to improve the processes or technologies and to increase future compliance. For example, in The Matter of Goodyear Tire & Rubber Company (1991), the company paid a \$135,000 penalty and spent approximately \$405,000 to remove and replace eight PCB transformers. The average penalty per case was approximately \$500,000. Supplemental Environmental Projects (SEPs) were required in three of the cases. In another case, B.F. Goodrich (1993) was required to implement an environmentally beneficial project to reduce mercury emissions beyond the NESHAP requirement, and to conduct environmental audits at several of its facilities.

The case of U.S. et al. v. Production Plated Plastic, Inc. et al. (1992) is considered significant by the EPA because the court held a corporate officer and the owner of the company personally liable.

VII.C.2. Supplemental Environmental Projects (SEPs)

Below is a list of Supplementary Environmental Projects (SEPs). SEPs are compliance agreements that reduce a facility's stipulated penalty in return for an environmental project that exceeds the value of the reduction. Often, these projects fund pollution prevention activities that can significantly reduce the future pollutant loadings of a facility.

In December, 1993, the Regions were asked by EPA's Office of Enforcement and Compliance Assurance to provide information on the number and type of SEPs entered into by the Regions. The following chart contains a representative sample of the Regional responses addressing the rubber and plastics products industry. The

information contained in the chart is not comprehensive and provides only a sample of the types of SEPs developed for the rubber and plastics products industry.

SEP Exhibit 38
Supplemental Environmental Projects
Rubber and Plastics (SIC 30)

Case Name	EPA Region	Statute/Type of Action	Type of SEP	Estimated Cost to Company	Expected Environmental Benefits	Final Assessed Penalty	Final Penalty After Mitigation
Accurate Plastics Denver, CO	8	EPCRA	Pollution Prevention	\$ 14,041	Purchase, install, and operate new air assisted airless spray equipment to reduce the release of VOCs to the atmosphere by as much as ten percent.		\$ 2,060
Interplastic Corporation Pryor, OK	6	CERCLA	Equipment Donation	\$ 7,000	Donate emergency and/or computer equipment to the Local Emergency Planning Committee (LEPC) to respond to and/or plan for chemical emergencies. Participate in LEPC activities.	\$ 25,000	\$ 5,000
Kerr Group, Inc. Chicago, IL	5	CAA	Pollution Prevention	\$ 300,000	Replace gasket manufacturing process with a non-VOC process to reduce VOC emissions by approximately 50 tons/yr.	\$ 76,000	\$ 38,000
Laminated Products Kenosha, WI	5	EPCRA	Pollution Prevention	\$ 173,000	Use a water-based adhesive to eliminate the use and release of 26,000 lbs/yr of acetone and 11,000 lbs/yr of toluene.	\$ 40,000	\$ 4,000

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VIII. COMPLIANCE ASSURANCE ACTIVITIES AND INITIATIVES

This section highlights the activities undertaken by this industry sector and public agencies to voluntarily improve the sector's environmental performance. These activities include those independently initiated by industrial trade associations. In this section, the notebook also contains a listing and description of national and regional trade associations.

VIII.A. Sector-Related Environmental Programs and Activities

Goodyear, the biggest tire manufacturer in the U.S., has implemented a waste minimization and a SARA chemicals reduction program which has proven to be quite effective. In the mid 1980's, Goodyear set a corporate goal of 10 percent annual reduction in solid waste disposal. In 1988, the CEO of Goodyear established a more ambitious goal of 90 percent reduction in solid waste disposal for North American facilities and an elimination of all landfilling by 1994. Currently, each division of Goodyear is setting annual reduction goals.

Many strategies have been employed to help Goodyear reach its goals. Two internal waste minimization conferences have been held to create a forum for the exchange and discussion of pollution reduction ideas. Plants are now required to track various categories of waste oil and grease, hazardous wastes (i.e., some compounding agents), process waste, and material waste (i.e., fabrics, scrap rubber, etc.). Monthly reports on the waste disposal tracking practices are required for review at corporate headquarters. In addition to the monthly reports, all Goodyear plants created flow diagrams for each waste stream, wrote plant-specific waste reduction plans, and selected yearly projects for waste minimization. The plants also exchange waste minimization ideas and information on successes and failures through corporate headquarters.

The results of these efforts have been very positive. Since 1988, there has been an overall 67 percent reduction of waste generation (based on 1993 data from all North American plants). At present, 35 percent of all waste is recycled at the facilities, and the pounds of waste produced per 100 pounds of finished stock has decreased by 56 percent since 1988. 1,3 butadiene releases were reduced 64 percent by the target date, and as of 1993 has been reduced 83 percent since 1988.

Goodyear is also developing waste minimization plans for the future. Currently, a cross-functional team from the corporate headquarters is working on recyclable packaging for all of the raw materials.

VIII.B. EPA Voluntary Programs

33/50 Program

The "33/50 Program" is EPA's voluntary program to reduce toxic chemical releases and transfers of 17 chemicals from manufacturing facilities. Participating companies pledge to reduce their toxic chemical releases and transfers by 33 percent as of 1992 and by 50 percent as of 1995 from the 1988 baseline year. Certificates of Appreciation have been given to participants who meet their 1992 goals. The list of chemicals includes 17 high-use chemicals reported in the Toxics Release Inventory.

Exhibit 39 lists those companies participating in the 33/50 program that reported under SIC code 30 to TRI. Many of the participating companies listed multiple SIC codes (in no particular order), and are therefore likely to conduct operations in addition to manufacturing Rubber and Miscellaneous Plastic Products. The table shows the number of facilities within each company that are participating in the 33/50 program; each company's total 1993 releases and transfers of 33/50 chemicals; and the percent reduction in these chemicals since 1988.

Exhibit 39

Rubber and Misc. Plastic Product Producers Participating in the 33/50 Program

Parent Facility Name	Parent City	ST	SIC Codes	# of Participating Facilities	1993 Releases and	% Reduction 1988 to 1993
3m Minnesota Mining & Mfg. Co	St. Paul	MN	3081, 3053, 3229, 3861, 2843, 2899	8	16,481,098	70
A. W. Chesterton Company	Stoneham	MA	3053, 3561, 2869	1	13,250	65
Abbott Laboratories	North Chicago	IL	3069, 3089	2	2,392,515	20
Aladdin Industries Inc	Nashville	TN	3086, 3469, 3648	1	53,741	91
Albar Industries Inc	Lapeer	MI	3089	1	27,760	55
Aldan Rubber Co.	Philadelphia	PA	3069	1	209,030	80
Allied-Signal Inc	Morristown	NJ	3083	2	2,080,501	50
Aluminum Company Of America	Pittsburgh	PA	3089	5	2,403,017	51

Exhibit 39 (cont'd)

Rubber and Misc. Plastic Product Producers Participating in the 33/50 Program

Parent Facility Name	Parent City	ST	SIC Codes	# of Participating Facilities	1993 Releases and	% Reduction 1988 to 1993
Ameron Inc Delaware	Pasadena	CA	3084	1	184,882	**
Amsted Industries Incorporated	Chicago	IL	3084	1	1,834,493	66
Apogee Plastic Tech. Inc.	Daytona Beach	FL	3087	1	45,921	33
Avon North America Inc	Cadillac	MI	3061	1	0	***
B F Goodrich Company	Akron	OH	3087, 2821	10	621,207	50
Baker Hughes Incorporated	Houston	TX	3061	1	193,116	20
Barnhardt Manufacturing Co	Charlotte	NC	3086	1	629,426	25
Baxter International Inc	Deerfield	IL	3081, 2671, 3089	1	42,570	80
Bemis Company Inc	Minneapolis	MN	3081, 3083, 2754, 2759, 26713921	3	936,449	50
Bhar Incorporated	Fort Wayne	IN	3087	1	755	50
Bicc Usa Inc	Chicago	IL	3087	1	152,253	15
Blue Ridge Products Co Inc	Hickory	NC	3086	1	39,369	**
Borden Inc	New York	NY	3081, 2754, 2295	2	1,644,614	*
Bp America Inc	Cleveland	OH	3089, 2299	1	1,597,404	24
Bridgestone/Firestone Inc	Akron	OH	3011	5	166,052	50
Brown Group Inc	St Louis	MO	3069, 3079, 3086, 3089	1	213,505	50
Cabot Corporation	Boston	MA	3086	2	2,407,581	50
Caterpillar Inc	Peoria	IL	3052, 3069, 3089, 3086	2	870,439	60
Central Plastics Company	Shawnee	OK	3089, 3494	1	43,635	50
Chem-Tech Rubber Inc	West Haven	CT	3069	1	561,000	***
Chestnut Ridge Foam Inc.	Latrobe	PA	3069	1	22,000	50
Chevron Corporation	San Francisco	CA	3084	1	2,794,502	50
Como Plastics Corporation	Columbus	IN	3082	1	59,657	***
Crain Industries Inc	Fort Smith	AR	3086	12	2,700,636	8
Creative Foam Corporation	Fenton	MI	3069	2	331,566	*
Dana Corporation	Toledo	OH	3053	2	1,652,123	**
Delbar Products Inc	Perkasie	PA	3089, 3465	1	102,983	50
Design House Inc	Germantown	WI	3089	1	98,256	*
Dexter Corporation	Windsor	CT	3087	2	122,127	51
Dow Chemical Company	Midland	MI	3086, 5169, 2821	4	2,769,363	50
Dow Corning Corporation	Midland	MI	3069	2	1,134,610	16
E. I. Du Pont De Nemours & Co	Wilmington	DE	3081, 2821, 2869, 3089	1	11,740,853	50
Eagle-Picher Industries Inc	Cincinnati	OH	3069	6	227,242	50

Exhibit 39 (cont'd)

Rubber and Misc. Plastic Product Producers Participating in the 33/50 Program

Parent Facility Name	Parent City	ST	SIC Codes	# of Participating Facilities	1993 Releases and	% Reduction 1988 to 1993
Eastman Kodak Company	Rochester	NY	3087	1	5,827,091	50
Ebonite International Inc	Hopkinsville	KY	3089	1	25,700	94
Ensign-Bickford Ind. Inc.	Simsbury	CT	3081	1	26,233	***
Federal-Mogul Corporation	Southfield	MI	3053	3	255,996	50
Ferro Corporation	Cleveland	OH	3087	1	165,529	50
Flexcon Company Inc	Spencer	MA	3081	3	309,851	54
Ford Motor Company	Dearborn	MI	3089, 3114	2	15,368,032	15
Forsch Ltd	Atlanta	GA	3089	2	494,675	21
Gates Corporation	Denver	CO	3052	6	478,941	***
Gencorp Inc	Akron	OH	3069	10	5,453,359	34
General Electric Company	Fairfield	CT	3083, 3299, 2821	1	5,010,856	50
General Motors Corporation	Detroit	MI	3469, 3674, 3089, 3694, 3679, 3471	3	16,751,198	*
General Tire Inc	Akron	OH	3011	1	54,969	***
Georgia Gulf Corporation	Atlanta	GA	3087	1	39,480	80
Globe Manufacturing Co	Fall River	MA	3069, 2824	1	374,293	45
Goodyear Tire & Rubber Co	Akron	OH	3011	7	3,932,157	50
Great Western Foam Pdts Corp	Orange	CA	3086	3	1,264,978	*
Great Western Foam Pdts Corp	Hayward	CA	3086	2	25,000	***
Hartzell Manufacturing Inc	Saint Paul	MN	3089	1	15,050	85
HBDIndustries Inc	Bellefontaine	OH	3052	2	361,100	*
Hercules Incorporated	Wilmington	DE	3089, 3764	1	5,014,664	50
HM Anglo-American Ltd	New York	NY	3089, 3471, 3451, 3579	3	1,265,741	2
Home Interiors & Gifts Inc	Dallas	TX	3089	1	181,140	83
ICI Americas	Wilmington	DE	3089, 2869	2	165,162	50
International Paper Company	Purchase	NY	3083	2	2,784,831	50
Iten Industries Inc	Ashtabula	OH	3083	1	669	*
Itt Corporation	New York	NY	3052, 3714	1	735,332	7
J P Emco Inc	Ada	OK	3089	1	316,600	75
JMK International Inc	Fort Worth	TX	3069, 2822	1	34,141	50
Jones & Vining Incorporated	Braintree	MA	3089	1	394,001	89
Keene Corporation	New York	NY	3089, 2821	1	14,450	**
Key Plastics Inc	Plymouth	MI	3089	1	44,340	50
Kimberly-Clark Corporation	Irving	TX	3086, 3842, 3949	1	488,160	50
Lacks Enterprises Inc	Grand Rapids	MI	3089, 3471	6	867,354	27
Liberty Polyglas Inc	West Mifflin	PA	3083	1	18,718	*
Lord Corporation	Erie	PA	3069, 3471	3	1,111,309	58

Exhibit 39 (cont'd)

Rubber and Misc. Plastic Product Producers Participating in the 33/50 Program

Parent Facility Name	Parent City	ST	SIC Codes	# of Participating Facilities	1993 Releases and	% Reduction 1988 to 1993
Louisville Tile Distributors	Louisville	KY	3088	1	27,000	50
Macho Products Inc	Palm Bay	FL	3069, 3949, 3086	1	471,824	**
Marley Usa Holding Corporation	Johnson City	TN	3089, 2499	1	74,713	*
Masco Industries Inc	Taylor	MI	3053	3	488,484	***
Mascotech	Taylor	MI	3069	1	3,163,830	35
Miles Inc	Pittsburgh	PA	3069	1	1,095,504	40
Milliken & Company	Spartanburg	SC	3069	1	13,500	50
Millipore Corporation	Bedford	MA	3089	1	65,529	50
Mobil Corporation	Fairfax	VA	3081, 2673	1	4,263,284	50
Molded Fiber Glass Companies	Ashtabula	OH	3089	3	86,211	50
Monsanto Company	Saint Louis	MO	3086, 2821	2	1,683,580	23
Morgan Stanley Leveraged Fund	New York	NY	3087	4	2,166,420	13
Newell Co	Freeport	IL	3089	1	324,283	23
Norton Company	Worcester	MA	3086	1	40,831	63
O'Sullivan Corporation	Winchester	VA	3082	4	2,461,791	*
Oberg Industries Inc	Freeport	PA	3469, 3471, 3089	1	18,435	85
Occidental Petroleum Corp	Los Angeles	CA	3081, 3087	1	8,896,126	19
Owens-Illinois Inc	Toledo	OH	3469, 3089	1	412,573	***
Parker Hannifin Corporation	Cleveland	OH	3052	3	244,966	50
Peco Manufacturing Co. Inc.	Portland	OR	3089, 3363, 3382	1	16,409	100
Permacel	North	NJ	3069, 3089	1	485,521	47
Phifer Wire Products Inc	Tuscaloosa	AL	3089, 3496	1	24,500	50
Phillips Petroleum Company	Bartlesville	OK	2869, 2879, 3083, 2087, 2821	1	2,367,877	50
Phillips Plastics Corporation	Phillips	WI	3089	1	33,112	***
Plymouth Rubber Company Inc	Canton	MA	3069, 3089	1	343,000	*
PPG Industries Inc	Pittsburgh	PA	2821, 2819, 2869, 3081	1	2,772,331	50
Premix Inc	N Kingsville	OH	3089	2	497,852	23
Purethane Inc	West Branch	IA	3086, 3714	1	213,153	50
Rayven Inc	Saint Paul	MN	3081	1	14,412	**
Reinz Wisconsin Gasket	Milwaukee	WI	3053	1	16,820	55
Reynolds Metals Company	Richmond	VA	3089, 3497, 2671, 2754	2	2,055,294	38
Rogers Corporation	Rogers	CT	3061, 3086	3	76,995	***
Roehm And Haas Company	Philadelphia	PA	3081	1	1,210,244	50

Exhibit 39 (cont'd)

Rubber and Misc. Plastic Product Producers Participating in the 33/50 Program

Parent Facility Name	Parent City	ST	SIC Codes	# of Participating Facilities	1993 Releases and	% Reduction 1988 to 1993
S C Johnson & Son Inc	Racine	WI	2821, 2842, 2879, 2844, 2899, 3089	1	104,055	50
S M R Technologies Inc	Sharon	OH	3069	1	34,600	33
Sandoz Corporation	New York	NY	3087	5	104,490	50
Seaward Intl. Inc.	Clear Brook	VA	3089	1	69,000	60
Shell Petroleum Inc	Houston	TX	3089	2	3,240,716	55
Siebe Industries Inc	Richmond	VA	3069	4	849,335	2
SKF Usa Inc	King Of	PA	3053	5	150,772	***
Solvay America Inc	Houston	TX	3081	1	123,583	*
Sonoco Products Company	Hartsville	SC	3089	3	621,380	1
Stanley Works	New Britain	CT	3231, 3089, 2499	2	508,199	50
Stern Rubber Company	Staples	MN	3061	1	8,610	75
Superior Home Products	Maryville	IL	3088	1	14,500	50
Sweetheart Holdings Inc	Chicago	IL	2656, 3082, 3089, 2679	1	12,404	49
Tech Industries Inc	Woonsocket	RI	3089, 3471	1	27,003	64
Tenneco Inc	Houston	TX	3353, 3081	1	1,272,423	8
Texas Instruments Incorporated	Dallas	TX	3625, 3822, 2714, 3672, 3089	1	344,225	25
Therma-Tru Corp	Sylvania	OH	3442, 3089	1	17,255	41
Thyssen Holding Corporation	Troy	MI	3089	2	313,705	11
Trinity American Corp	Glenola	NC	3086	1	750	***
Trinova Corporation	Maumee	OH	3089	9	488,879	50
Union Carbide Corporation	Danbury	CT	3069	1	728,129	50
United Silk Mills (Usa) Ltd	New York	NY	3052	1	14,500	60
United Technologies Corp	Hartford	CT	3089	8	2,393,252	50
Vernay Laboratories Inc	Yellow	OH	3069	1	13,347	50
Vista Chemical Company	Houston	TX	3087	2	106,497	50
Vytech Ind. Inc.	Anderson	SC	3081, 2295, 2893, 3089	1	599,701	*
W R Grace & Co Inc	Boca Raton	FL	3089	5	615,509	50
Westinghouse Electric Corp	Pittsburgh	PA	3083, 3089, 2672	2	1,137,198	28
Witco Corporation	New York	NY	3089	3	327,611	50
Woodbridge Holdings Inc	Mississauga,		3086	1	45,081	***
Zeneca Holdings Inc	Wilmington	DE	2295, 3087	1	1,609,047	*

* = not quantifiable against 1988 data.

Environmental Leadership Program

The Environmental Leadership Program (ELP) is a national initiative piloted by EPA and State agencies in which facilities have volunteered to demonstrate innovative approaches to environmental management and compliance. EPA has selected 12 pilot projects at industrial facilities and Federal installations which will demonstrate the principles of the ELP program. These principles include: environmental management systems, multimedia compliance assurance, third-party verification of compliance, public measures of accountability, community involvement, and mentoring programs. In return for participating, pilot participants receive public recognition and are given a period of time to correct any violations discovered during these experimental projects. (Contact: Tai-ming Chang, ELP Director, 202-564-5081 or Robert Fentress, 202-564-7023)

Gillette ELP Project

The objective of the Gillette Environmental Leadership Program is the development and implementation of a third party compliance and management systems audit and verification process. The project will involve the development of environmental compliance and environmental management systems audit protocol criteria that can be adopted and easily implemented by other facilities to assess compliance with relevant regulations. The three Gillette facilities that are participating are: South Boston Manufacturing Center, blade and razor manufacturing; North Chicago Manufacturing Center, batch chemical manufacturing; and Santa Monica, CA, stationary products manufacturing . (Contact: Scott Throwe, 202-564-7013).

Project XL

Project XL was initiated in March 1995 as a part of President Clinton's *Reinventing Environmental Regulation* initiative. The projects seek to achieve cost effective environmental benefits by allowing participants to replace or modify existing regulatory requirements on the condition that they produce greater environmental benefits. EPA and program participants will negotiate and sign a Final Project Agreement, detailing specific objectives that the regulated entity shall satisfy. In exchange, EPA will allow the participant a certain degree of regulatory flexibility and may seek changes in underlying regulations or statutes. Participants are encouraged to seek stakeholder support from local governments, businesses, and environmental groups. EPA hopes to implement fifty pilot projects in four categories including facilities, sectors, communities, and government agencies regulated by EPA. Applications will be accepted on a rolling basis and projects will move to implementation within six months of their selection. For additional information regarding XL Projects, including application procedures and

criteria, see the May 23, 1995 Federal Register Notice, or contact Jon Kessler at EPA's Office of Policy Analysis (202) 260-4034.

Green Lights Program

EPA's Green Lights program was initiated in 1991 and has the goal of preventing pollution by encouraging U.S. institutions to use energy-efficient lighting technologies. The program has over 1,500 participants which include major corporations; small and medium sized businesses; Federal, State and local governments; non-profit groups; schools; universities; and health care facilities. Each participant is required to survey their facilities and upgrade lighting wherever it is profitable. EPA provides technical assistance to the participants through a decision support software package, workshops and manuals, and a financing registry. EPA's Office of Air and Radiation is responsible for operating the Green Lights Program. (Contact: Susan Bullard at 202-233-9065 or the Green Light/Energy Star Hotline at 202-775-6650)

WasteWi\$e Program

The WasteWi\$e Program was started in 1994 by EPA's Office of Solid Waste and Emergency Response. The program is aimed at reducing municipal solid wastes by promoting waste minimization, recycling collection, and the manufacturing and purchase of recycled products. As of 1994, the program had about 300 companies as members, including a number of major corporations. Members agree to identify and implement actions to reduce their solid wastes and must provide EPA with their waste reduction goals along with yearly progress reports. EPA in turn provides technical assistance to member companies and allows the use of the WasteWi\$e logo for promotional purposes. (Contact: Lynda Wynn, 202-260-0700 or the WasteWi\$e Hotline at 1-800-372-9473)

Climate Wise Recognition Program

The Climate Change Action Plan was initiated in response to the U.S. commitment to reduce greenhouse gas emissions in accordance with the Climate Change Convention of the 1990 Earth Summit. As part of the Climate Change Action Plan, the Climate Wise Recognition Program is a partnership initiative run jointly by EPA and the Department of Energy. The program is designed to reduce greenhouse gas emissions by encouraging reductions across all sectors of the economy, encouraging participation in the full range of Climate Change Action Plan initiatives, and fostering innovation. Participants in the program are required to identify and commit to actions that reduce greenhouse gas emissions. The program, in turn, gives organizations early recognition for their reduction commitments; provides technical assistance through consulting services, workshops, and guides; and provides access to the program's centralized information system. At EPA, the program is operated by the Air

and Energy Policy Division within the Office of Policy Planning and Evaluation. (Contact: Pamela Herman, 202-260-4407)

NICE³

The U.S. Department of Energy and EPA's Office of Pollution Prevention are jointly administering a grant program called The National Industrial Competitiveness through Energy, Environment, and Economics (NICE). By providing grants of up to 50 percent of the total project cost, the program encourages industry to reduce industrial waste at its source and become more energy-efficient and cost-competitive through waste minimization efforts. Grants are used by industry to design, test, demonstrate, and assess the feasibility of new processes and/or equipment with the potential to reduce pollution and increase energy efficiency. The program is open to all industries; however, priority is given to proposals from participants in the pulp and paper, chemicals, primary metals, and petroleum and coal products sectors. (Contact: DOE's Golden Field Office, 303-275-4729)

VIII.C. Trade Association/Industry Sponsored Activity

In an effort to determine private sector activities, major trade associations and corporations were contacted. There are a significant number of activities occurring in both the rubber and plastic industries. The Rubber Manufacturers Association (RMA) has projects completed or underway which are looking at issues such as storm water, emissions factors, scrap tires, and leaching potentials of rubber products. The Society of the Plastic Industry has started an incentive program called Operation Clean Sweep (OCS) to help plastic product manufacturers comply with the EPA-regulated problem of plastic pellet resin loss.

VIII.C.1. Environmental Programs

Storm Water

EPA has identified storm water runoff as one of the leading causes of the deterioration of water quality in rivers, lakes, streams, wetlands, and estuaries. As a result, EPA promulgated regulations on November 16, 1990, that required permit applications for storm water discharges from selected municipal and industrial point sources. In 1990, the RMA sponsored a group storm water application project which involved over 275 individual facilities. Storm water sampling indicated that the rubber product manufacturing facilities have minimal storm water pollution concerns. The draft NPDES permits published in the Federal Register on November 19, 1993 for the rubber industry reflect this "minimal concern" by proposing the following provisions:

- No specific numerical effluent limitations are needed.
- Best management practices (BMP) are effective at reducing pollutants.
- Quarterly visual observation of storm water discharges will help minimize pollution.

Many States are not waiting for EPA to finalize the permitting requirements and have requested that plants obtain local permits with reporting and chemical analysis provisions.

Air Emissions

The RMA is also looking into air emissions. Accurate emissions factors for hazardous air pollutants (HAPs) are required by CAA Title V for preparation of emissions inventories in rubber manufacturing plants. The rubber manufacturing industry is one of the industries for which up-to-date emissions factors are not available. The RMA has initiated an emissions sampling program, on behalf of its members, to develop HAP emissions factors for processes with little available air pollutant emissions data. Six processes common to both the tire and general rubber products industries were the subject of this project. The processes were: mixing, milling, extruding, calendering, vulcanizing, and grinding. Twenty-six rubber compounds/mixtures were studied in this program. For each test, emissions rates were developed as pounds of pollutant emitted per pound of rubber (or product) processed.

The emissions factors project is breaking new ground as this type of testing has never been done on such a scale for the tire and rubber industry. RMA and members of its Environment Committee have held three meetings with EPA's air program in Research Triangle Park. EPA officials have indicated to RMA representatives a willingness to use the results of this project as the basis for a new section of AP-42, EPA's compilation of air pollutant emissions factors. EPA predicts that the new rubber industry factors could be on EPA's Bulletin Board by the end of 1995 and that full print publication could take place in 1996.

Scrap Tire Disposal

Scrap tire disposal is another issue being addressed by the rubber industry. In 1990, members of the RMA created the Scrap Tire Management Council (the Council). The Council is working to find uses for scrap tires that are both economically and environmentally sound. The three main themes held by the council are reuse, recycle, or recovery. To date, improvements in finding uses for scrap tires have been strong. In 1993, approximately 33 percent of the 250

million scrap tires introduced that year were used in some way. This represents a tripling of the amount of scrap tires used in 1990 and more than a five fold increase in scrap tire usage since 1985.

The RMA is also looking into the leaching potential of disposed scrap rubber. In 1989 the RMA conducted an assessment using EPA's proposed Toxicity Characterization leaching Procedure (TCLP), to determine what levels of chemicals, if any, are leached from representative RMA products. The TCLP proposes to add chemicals to the existing list of compounds regulated under Subtitle C of RCRA, and to introduce new extraction methods. The results of the TCLP analysis showed that none of the products tested, cured or uncured, exceeded proposed TCLP regulatory levels. The RMA also compared the effect of a modification to the TCLP recently proposed by EPA in 1989 which would eliminate grinding prior to leaching; in effect making TCLP tests of rubber products more representative of disposal practices. The results from tests of ground and unground samples were comparable.

Within the plastics products industry, the Society of the Plastic Industry (SPI) started the incentive program Operation Clean Sweep (OCS) to promote efforts to reduce plastic resin pellet loss. SPI implements the program informally, by requiring all participating facilities to encourage spill minimization, prompt and thorough cleanup of spills, and proper pellet disposal. The participating manufacturers sign a pledge which says they will try to prevent pellet loss. They then draft and submit an action plan stating how they plan to comply with the pledge. A typical action plan includes measures such as employee education, conscientious sweeping efforts, enhanced pellet capture methods, and disposal precautions. In 1992, SPI held a conference as part of OCS to encourage dialog within the industry on how to control resin pellet loss options. Currently, SPI is in the process of putting labels on all hoppers and cars used to transport the pellets to remind employees of the importance of not spilling the pellets. They are also offering OCS education videos, manuals, hats, t-shirts, and posters.

VIII.C.2. Summary of Trade Associations

Rubber Manufacturers Association (RMA) 1400 K Street, N.W. Washington, D.C. 20005 Phone: (202) 682-4800 Fax: (202) 682-4854	Members: 185 Staff: 25 Budget: Contact: Thomas E. Cole
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Founded in 1900, RMA represents manufactures of tires, tubes, mechanical and industrial products, roofing, sporting goods, and other rubber products. RMA compiles monthly, quarterly, and annual statistics on rubber and rubber products. Committees within the organization include Economics and Trade,

Education, Electronic Data Processing, Energy, Environment, Government Relations, OSHA, Public Relations, and Statistics. Divisions within the organization include Industrial Products, Molded and Extruded Products, Roofing Products, Sealing Products, and Sundries and Tires.

International Tire Association (ITA)	Members: 1,000
P.O. Box 1067	Staff: 2
Farmington, CT 06034	Budget:
Phone: (203) 228-4739	Contact: Ann E. Evans
Fax:	

Founded in 1985, ITA is comprised of individuals working in the tire industry. It promotes international goodwill and communication in the industry and encourages publications. ITA bestows membership and achievement awards and sponsors seminars on tire industry issues. ITA also compiles statistics and sponsors lectures on scrap tires and universal sizing of tires. ITA publishes the Tire Advocate (quarterly).

Tire and Rim Association (TRA)	Members: 123
175 Montrose Avenue, West	Staff: 3
Copley, OH 44321	Budget:
Phone: (216) 666-8121	Contact: J.F. Pacuit
Fax: (216) 666-8340	

Founded in 1903, TRA includes manufacturers of tires, rims, wheels, and related parts. TRA establishes standards (primarily dimensional) for the interchanging of tires, rim contours, tubes, valves, and flaps for passenger cars, motorcycles, trucks, buses, airplanes, and for earth moving, road building, agricultural, and industrial vehicles. TRA includes a Standards and Technical Advisory Committee. Subcommittees include Agricultural Tire and Rim, Aircraft Tire and Rim, Cycle Tire and Rim, Industrial Tire and Rim, Off-the-Road Tire and Rim; Passenger Car Tire and Rim; Truck-Bus Tire and Rim; and Tube and Valve. TRA also publishes Engineering Design Information for Aircraft Tires and Rims (periodic), Engineering Design Information for Ground Vehicles Tires and Rims (quarterly), Tire and Rim Association-Aircraft Year Book, and Tire and Rim Association Year Book.

National Tire Dealers and Retreaders Association (NTDRA)	Members: 5,000
6333 Long Street, Suite 340	Staff: 30
Shawnee, KS 66216	Budget:
Phone: (913) 268-6273	Contact: Philip P. Friedlander
Fax: (913) 268-6388	

Founded in 1920, NTDRA represents independent tire dealers and retreaders. It includes 25 State and 80 local groups. NTDRA publishes Master Retreader

(bimonthly), National Tire Dealers and Retreaders Association-Hotline (bimonthly), National Tire Dealers and Retreaders Association-Who's Who Membership Directory (annual), NTDRA Dealer News (monthly), and NTDRA Membergram (monthly).

Society of the Plastic Industry (SPI) 1275 K Street, N.W., Suite 400 Washington, D.C. 20005 Phone: (202) 371-5200 Fax: (202) 371-1022	Members: 2,000 Staff: 120 Budget: Contact: Larry L. Thomas
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Founded in 1937, SPI represents manufacturers and processors of molded, extruded, fabricated, laminated, calendered, and reinforced plastic; manufacturers of raw materials, machinery, tools, dies, and molds; and testing laboratories. SPI supports research, proposes standards for plastics products, compiles statistics, maintains a speakers' bureau, organizes competitions, and bestows awards. SPI also publishes Financial and Operating Ratios (annual); Plastic News Briefs (monthly); Society of the Plastic Industry - Facts and Figures (annual); Society of the Plastic Industry - Labor Survey (annual); and Society of the Plastic Industry - Membership (annual).

Society of Plastic Engineers (SPE) 14 Fairfield Drive Brookfield, CT 06804-0403 Phone: (203) 775-0471 Fax: (203) 775-8490	Members: 37,000 Staff: 35 Budget: \$5,000,000 Contact: Robert D. Forger
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SPE is a professional society of plastic scientists, engineers, educators, students, and others interested in the design, development, production, and utilization of plastic materials, products, and equipment. SPE awards a plaque, gold medal, and \$5,000 in recognition of fundamental contributions to the technology of polymer science and engineering, plus seven other awards of \$2,500 each for achievements in engineering and technology, education, business management, research, production of unique plastics products for consumer and industrial use, and contribution to mankind in the field of plastic. SPE also conducts seminars. Committees within SPE include Award, Credentials, Education, Education Seminar, International Relations, Management Involvement, New Technology, Plastic Education Foundation, Public Interest, Technical Programs, and Technical Volumes. Divisions include Advanced Polymer Composites, Automotive, Blow Molding, Color and Appearance, Decorating, Electrical and Electronics, Engineering Properties and Structure, Extrusion, Injection Molding, Marketing, Medical Plastic, Mold Making and Mold Design, Plastic Analysis, Plastic Recycling, Polymodifiers and Additives, Thermoforming, Thermoplastic Materials and Foams, Thermosetting Molding, and Vinyl Plastic. SPE also publishes the Journal of Vinyl Technology

(quarterly); Plastic Engineering (monthly); Polymer Composites (bimonthly); Polymer Engineering and Science (semimonthly); and Preprint Volumes and the Plastic Engineering Series (books).

Association of Rotational Molders (ARM) 435 North Michigan avenue, Suite 1717 Chicago, IL 60611-4067 Phone: (312) 644-0828 Fax:	Members: 300 Staff: 3 Budget: \$500,000 Contact: Charles D. Fredrick
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Founded in 1976, ARM represents plastic processors who use the rotational molding process, their suppliers, and overseas molders. ARM's purposes are to increase awareness of roto-molding, exchange technical information, provide education, and standardize production guidelines. ARM conducts research seminars, educational video, and slide programs, maintains a private library, sponsors a product contest, and bestows awards. ARM also offers a membership database. ARM publishes the ARM Roster (annual) and the Roto-Molder Review (4-6/year).

National Association of Plastic Distributors (NAPD) 6333 Long Street, Suite 340 Shawnee, KS 66216 Phone: (913) 268-6273 Fax: (913) 268-6388	Members: 450 Staff: 4 Budget: \$825,000 Contact: Carol K. Wagner
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Founded in 1955, NAPD represents distributors of plastic materials, firms that both manufacture and distribute these materials, and manufacturers who sell their products through plastic distributors. The objective of NAPD is to promote proper and efficient distributor involvement in the plastic industry. NAPD maintains liaison with associated organizations, operates a library, bestows awards, and compiles statistics. Publications include the Cost-of-Doing Business Survey (annual); the Membership Directory (annual); the NAPD Magazine (monthly); and computerized data processing manuals, charts, and other materials.

Tube and Pipe Fabricators Association, International (TPFA) 5411 East State Street Rockford, IL 61108 Phone: (815) 399-8700 Fax: (815) 339-7279	Members: 450 Staff: 8 Budget: Contact: John Nandzik
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Founded in 1983, TPFA represents companies that are responsible for the fabrication of plastic tubing and piping, and suppliers of equipment and services. TPFA provides a forum for individuals involved in the tube and pipe

fabricating industry. It encourages discussion on problems involved in pipe manufacturing and assists in formulating standards. TPFA's publications include Membership Directory (annual), Technology Update (quarterly), TPQ - The Tube and Pipe Quarterly, news releases, and voluntary standards relevant to the pipe producing industry.

Plastic Pipe and Fittings Association (PPFA) Building C, Suite 20 800 Roosevelt Road Glen Ellyn, IL 60137 Phone: (708) 858-6540 Fax:	Members: 48 Staff: 4 Budget: Contact: Richard W. Church
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Founded in 1978, PPFA represents raw material suppliers and processors of plastic pipe and fittings. PPFA's objectives are to provide a forum for exchange of information and ideas; to see that existing code approvals for use of plastic pipe and fittings are retained; to obtain additional code approvals and develop new markets for products; to provide leadership and continuity for the industry; and to seek liaison and involvement with other organizations within the industry.

IX. CONTACTS/ACKNOWLEDGMENTS/RESOURCE MATERIALS/BIBLIOGRAPHY**General Profile**

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¹ TOXNET is a computer system run by the National Library of Medicine that includes a number of toxicological databases managed by EPA, National Cancer Institute, and the National Institute for Occupational Safety and Health. For more information on TOXNET, contact the TOXNET help line at 1-800-231-3766. Databases included in TOXNET are: CCRIS (Chemical Carcinogenesis Research Information System), DART (Developmental and Reproductive Toxicity Database), DBIR (Directory of Biotechnology Information Resources), EMICBACK (Environmental Mutagen Information Center Backfile), GENE-TOX (Genetic Toxicology), HSDB (Hazardous Substances Data Bank), IRIS (Integrated Risk Information System), RTECS (Registry of Toxic Effects of Chemical Substances), and TRI (Toxic Chemical Release Inventory). HSDB contains chemical-specific information on manufacturing and use, chemical and physical properties, safety and handling, toxicity and biomedical effects, pharmacology, environmental fate and exposure potential, exposure standards and regulations, monitoring and analysis methods, and additional references.

² EPA Regions include the following States: 1 (CT, MA, ME, RI, NH, VT); 2 (NJ, NY, PR, VI); 3 (DC, DE, MD, PA, VA, WV); 4 (AL, FL, GA, KY, MS, NC, SC, TN); 5 (IL, IN, MI, MN, OH, WI); 6 (AR, LA, NM, OK, TX); 7 (IA, KS, MO, NE); 8 (CO, MT, ND, SD, UT, WY); 9 (AZ, CA, HI, NV, Pacific Trust Territories); 10 (AK, ID, OR, WA).